CLAIMS

What is claimed is:

1. An apparatus comprising:

a distributed testing system comprising a logical agent, a server communicating with the logical agent and a graphical user interface (GUI) communicating with the server, the distributed testing system being extensible to, without technical intervention, interface with physical agents and heterogeneous measurements so that the interfaced physical agents perform the interfaced heterogeneous measurements for a test in accordance with control by an end user via the GUI.

2. An apparatus as in claim 1, further comprising:

a framework interfacing the physical agents and the heterogeneous measurements to the distributed testing system.

3. An apparatus as in claim 1, further comprising:

means for interfacing the physical agents and the heterogeneous measurements to the distributed testing system.

4. An apparatus as in claim 2, wherein the framework comprises:

a GUI integration framework interfacing the GUI with GUI plug-ins for the physical agents, and interfacing the GUI with GUI plug-ins for the heterogeneous measurements;

a server integration framework interfacing the server with server plug-ins for the physical agents, and interfacing the server with server plug-ins for the heterogeneous measurements; and

an agent integration framework interfacing the logical agent with agent plug-ins for the physical agents.

5. An apparatus as in claim 4, wherein

the GUI integration framework comprises an object-oriented class hierarchy for interfacing the GUI with the GUI plug-ins; and

the server integration framework comprises an object-oriented class hierarchy for interfacing the server with the server plug-ins.

6. An apparatus as in claim 5, wherein the class hierarchy of the GUI integration framework comprises:

GUI measurement objects for configuring and controlling measurements, the GUI measurement objects being derivable to create new measurements;

GUI test objects for adding and deleting measurements to/from tests, the GUI test objects being derivable to create new tests; and

a GUI test manager object for creating and deleting tests on the GUI,

the class hierarchy thereby being arranged with the GUI test manager object above the GUI test objects, and the GUI test objects being above the GUI measurement objects.

7. An apparatus as in claim 5, wherein the class hierarchy of the server integration framework comprises:

server measurement objects for configuring and controlling measurements, the server measurement objects being derivable to create new measurements;

server test objects for adding and deleting measurements to/from tests, the server test objects being derivable to create new tests; and

a server test manager object for creating and deleting tests on the server,

the class hierarchy thereby being arranged with the server test manager object above the server test objects, and the server test objects being above the server measurement objects.

8. An apparatus as in claim 5, wherein

the class hierarchy of the GUI integration framework comprises

GUI measurement objects for configuring and controlling measurements, the GUI measurement objects being derivable to create new measurements,

GUI test objects for adding and deleting measurements to/from tests, the GUI test objects being derivable to create new tests, and

a GUI test manager object for creating and deleting tests on the GUI,

the class hierarchy thereby being arranged with the GUI test manager object above the GUI test objects, and the GUI test objects being above the GUI measurement objects, and

the class hierarchy of the server integration framework comprises

server measurement objects for configuring and controlling measurements, the server measurement objects being derivable to create new measurements,

server test objects for adding and deleting measurements to/from tests, the server test objects being derivable to create new tests, and

a server test manager object for creating and deleting tests on the server,

the class hierarchy thereby being arranged with the server test manager object above the server test objects, and the server test objects being above the server measurement objects.

9. An apparatus comprising:

a logical agent;

a server communicating with the logical agent;

a graphical user interface (GUI) communicating with the server; and

a framework interfacing, without technical intervention, physical agents to the logical agent, the server and the GUI via plug-ins, and interfacing, without technical intervention, a plurality of measurements to the server and the GUI via plug-ins, the interfaced physical agents thereby performing the interfaced heterogeneous measurement for a test in accordance with control by an end user via the GUI.

10. An apparatus as in claim 9, wherein the framework comprises:

a GUI integration framework interfacing the GUI with GUI plug-ins for the physical agents, and interfacing the GUI with GUI plug-ins for the heterogeneous measurements;

a server integration framework interfacing the server with server plug-ins for the physical agents, and interfacing the server with server plug-ins for the heterogeneous measurements; and

an agent integration framework interfacing the logical agent with agent plug-ins for the physical agents.

11. An apparatus comprising:

a logical agent;

a server communicating with the logical agent;

a graphical user interface (GUI) communicating with the server;

a GUI integration framework interfacing the GUI with GUI plug-ins for physical agents, and interfacing the GUI with GUI plug-ins for heterogeneous measurements;

a server integration framework interfacing the server with server plug-ins for the physical agents, and interfacing the server with server plug-ins for the heterogeneous measurements; and

an agent integration framework interfacing the logical agent with agent plug-ins for the physical agents, the physical agents thereby performing the heterogeneous measurements for a test in accordance with control by an end user via the GUI.

12. An apparatus as in claim 11, wherein

the GUI integration framework comprises an object-oriented class hierarchy for interfacing the GUI with the GUI plug-ins; and

the server integration framework comprises an object-oriented class hierarchy for interfacing the server with the server plug-ins.

13. An apparatus as in claim 12, wherein the class hierarchy of the GUI integration framework comprises:

GUI measurement objects for configuring and controlling measurements, the GUI measurement objects being derivable to create new measurements;

GUI test objects for adding and deleting measurements from tests, the GUI test objects being derivable to create new tests; and

a GUI test manager object for creating and deleting tests on the GUI,

the class hierarchy thereby being arranged with the GUI test manager object above the GUI test objects, and the GUI test objects being above the GUI measurement objects.

14. An apparatus as in claim 12, wherein the class hierarchy of the server integration framework comprises:

server measurement objects for configuring and controlling measurements, the server measurement objects being derivable to create new measurements;

server test objects for adding and deleting measurements from tests, the server test objects being derivable to create new tests; and

a server test manager object for creating and deleting tests on the server,

the class hierarchy thereby being arranged with the server test manager object above the server test objects, and the server test objects being above the server measurement objects.

15. An apparatus as in claim 12, wherein

the class hierarchy of the GUI integration framework comprises

GUI measurement objects for configuring and controlling measurements, the GUI measurement objects being derivable to create new measurements,

GUI test objects for adding and deleting measurements from tests, the GUI test objects being derivable to create new tests, and

a GUI test manager object for creating and deleting tests on the GUI,

the class hierarchy thereby being arranged with the GUI test manager object above the GUI test objects, and the GUI test objects being above the GUI measurement objects, and

the class hierarchy of the server integration framework comprises

server measurement objects for configuring and controlling measurements, the server measurement objects being derivable to create new measurements,

server test objects for adding and deleting measurements from tests, the server test objects being derivable to create new tests, and

a server test manager object for creating and deleting tests on the server,

the class hierarchy thereby being arranged with the server test manager object above the server test objects, and the server test objects being above the server measurement objects.

16. An apparatus comprising:

a logical agent;

a server communicating with the logical agent;

a graphical user interface (GUI) communicating with the server;

means for interfacing the GUI with GUI plug-ins for physical agents, and for interfacing the GUI with GUI plug-ins for heterogeneous measurements;

means for interfacing the server with server plug-ins for the physical agents, and for interfacing the server with server plug-ins for the heterogeneous measurements; and

means for interfacing the logical agent with agent plug-ins for the physical agents, the physical agents thereby performing the heterogeneous measurements for a test in accordance with control by an end user via the GUI.